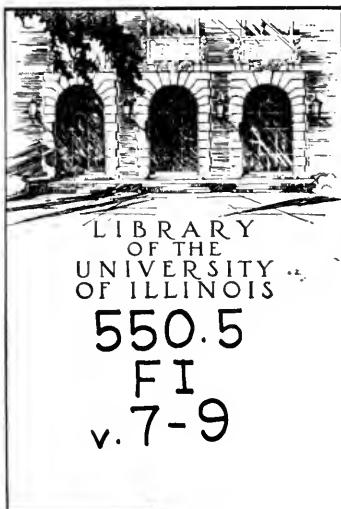




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THE STATUS OF PROGALEOPITHECUS AMEGHINO

BY BRYAN PATTERSON  
ASSISTANT CURATOR OF PALEONTOLOGY

Despite its arresting name, the genus *Progaleopithecus* (Ameghino, 1904, pp. 171-175; 1906, pp. 348-349, figs. 181, 182) has received scant attention in the literature of paleontology and zoogeography. Apart from the work of the original describer, I have encountered no reference to it, even in the voluminous compilations of such authors as Arldt and Scharff. This is a little surprising, for it is obvious that if the conception of relationships implied in the name were to be substantiated, the genus would be of great paleontologic and zoogeographic interest. Ameghino described two species from the Deseado formation of Patagonia, *P. fissurellatus* and *P. tournouëri*. The latter was based on two specimens, one of which is a mandibular fragment with part of the dentition. This specimen is now in the Collection Tournouër of the Laboratoire de Paléontologie, Muséum National d'Histoire Naturelle, in Paris, where I was able to study it during the summer of 1938.

The specimen consists of the symphysis and a portion of the left ramus bearing the incisors, canine and first two premolars, all very little worn. For reasons that will be presented below, it is believed that these teeth are of the deciduous, rather than of the permanent dentition as Ameghino thought. In addition, there is an associated right canine and  $dp_2$ . Ameghino's figure was almost certainly drawn from this individual.

The first two incisors are similar in structure and both are approximately as long as wide at the base of the crown; the second is somewhat larger than the first and has a slightly wider root. The crowns are high and divided into two cylindrical columns for almost their entire lengths. The external (posterior) column of each is rather longer than the internal, and its base is a little inclined forward from the vertical axis of the tooth.  $Di_3$  is strikingly dissimilar to its predecessors and closer, structurally, to the canine. It is convex

externally and concave—almost shovel-shaped—internally. The upper portion of the internal surface bears two grooves, the anterior one somewhat larger than the posterior, which isolate a cusp-like element. Two indentations, of which the anterior is much the deeper, occur on the cutting edge and continue downward into the grooves in the internal side.

The canine differs from  $di_3$  in that it is larger and relatively longer; a low posterior heel is present, the portion of the crown in front of the anterior groove is larger, and the posterior groove

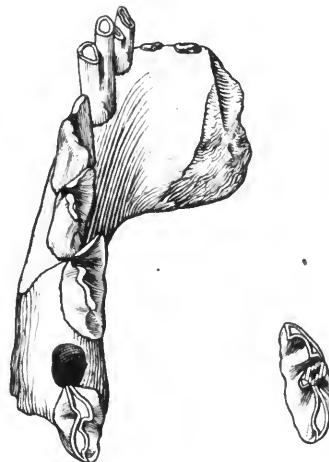


FIG. 8. *Progaleopithecus tournoueri* Ameghino. Dorsal view of the right  $dp_2$  and portion of mandible with left  $di_1$ — $dp_1$ . Approximately 3/1.

and indentation are notably smaller. The protoconid is clearly adumbrated.

$Dp_1$  is in general similar to the canine. The heel is larger and set off anteriorly by a ridge—the metaconid ridge—behind which is a well-defined groove. A very slight depression is present externally behind the protoconid. The cutting edge indentations, internal grooves and isolated cusp are precisely as on the canine. The anterior portion of the crown is longer, however, and the tooth as a whole more convex externally and more concave internally.  $Di_3$ , canine and  $Dp_1$  are imbricating, the posterior extremity of each tooth overlapping the anterior extremity of its successor. The crowns of all three taper very rapidly toward their bases; the roots are stout, single and also rapidly tapering.  $Dp_2$  is double-rooted, each root also having the characteristic cone-like shape. Several advances over  $Dp_1$  may be seen. The proto-metaconid is much stouter,

expanded antero-externally-postero-internally and demarcated posteriorly by well-defined external and internal grooves. The anterior wing of the trigonid is as long as the proto-metaconid and the talonid combined, and is decidedly curved antero-internally. The heel is considerably larger and bears an incipient entoconid ridge. On the

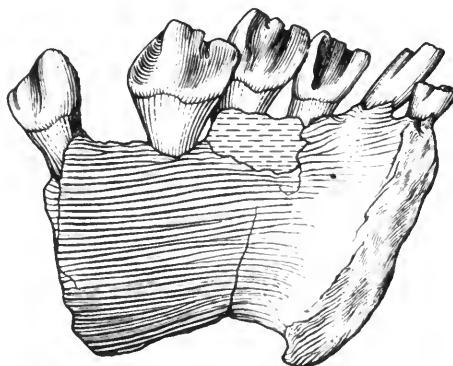
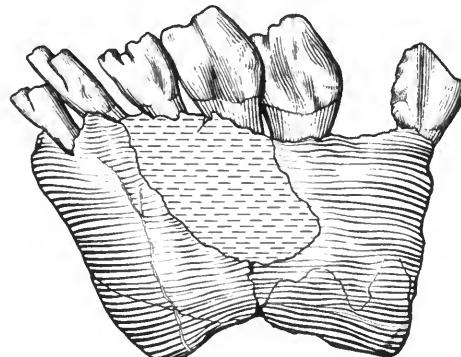


FIG. 9. *Progaleopithecus tournouëri* Ameghino. External and internal views of portion of left mandible with  $\text{di}_1\text{-dp}_2$ . Approximately 3/1.

internal surface the isolated cusp is large, the anterior groove small, and the posterior groove well developed.

The symphysis is fairly deep, moderately sloping upward anteriorly and, as Ameghino noted, completely fused.

#### MEASUREMENTS

	$\text{Di}_1$	$\text{Di}_2$	$\text{Di}_3$	$\text{Dc}$	$\text{Dp}_1$	$\text{Dp}_2$
A.-p. diam.....	1.4	1.6	3.0	4.0	4.9	5.3
Tr. diam.....	1.4	1.9	1.4	1.7	1.9	2.0

It is quite clear that *Progaleopithecus* is not referable to the Galeopithecidae. The comb-like first and second incisors, the elongate, multi-cusped third incisor<sup>1</sup> and the shallow symphysis of *Galeopithecus* and of *Galeopterus* distinguish these forms so sharply from the Deseado genus that close relationship is out of the question. *Progaleopithecus* is in all its characters a typical member of the notoungulate suborder Typotheria and is certainly referable to the Interatheriidae,<sup>2</sup> with which Ameghino's Progaleopithecidae (listed but not defined in 1906, p. 471) accordingly becomes synonymous. With but little change the description given above would be applicable to the milk dentition of *Prottypotherium* sp. figured by Sinclair (1909, pl. 5, figs. 13, 14). Resemblance between the two specimens is so close as to leave no doubt that the dentition under discussion is of the deciduous series; the rapidly tapering crowns and roots of  $d_3 - dp_2$  are particularly characteristic. Also, behind and beneath  $dp_2$  in the Paris specimen there is a cavity, sectioned by the breakage of the ramus, which contains tooth fragments at its base.

Recognition of the interatheriid affinities of *Progaleopithecus* suggests the possibility that the genus may be based on the milk dentition of one of the four Deseado members of the family, *Plagiarthrus* (= *Argyrohyrax*), *Archaeophylus*, *Cochilius* and *Phanophilus*, all described prior to 1904.<sup>3</sup> At present, however, it is not possible to identify it with any one of them. The only known species of *Plagiarthrus*, *P. clivus*, is much too large. *Cochilius* includes species of appropriate size, but it is primarily a Colhué-Huapí genus with but one species described as coming from the Deseado, and this with some reserve (Simpson, 1932, p. 5). *Phanophilus* is so inadequately

<sup>1</sup> The dental formula of the Galeopithecidae is variously interpreted; the arrangement followed here is Cabrera's.

<sup>2</sup> Ameghino (1904, p. 172) recognized the resemblances, as he almost invariably did in such cases, but regarded them as evidence that *Galeopithecus* was an exceedingly specialized descendant of the Typotheria.

<sup>3</sup> Simpson (1932, pp. 5-8) was in some doubt as to whether the first three of these were all valid. A skull of *Plagiarthrus* in the Field Museum collection (P13415) appears to me to demonstrate that this genus and *Cochilius* are distinct from each other. An incomplete mandible (P14687) tentatively referred to *Archaeophylus* differs considerably from either of these two forms in the structure of  $P_3$ . The distinction is sufficiently great, considering the rather unvarying nature of the interatheriid lower premolar-molar series, to justify belief that the animal represented by this specimen is also generically distinct. Unfortunately, however, the tentative reference is somewhat uncertain, for Ameghino (1897, p. 423) gave rooted premolars as a diagnostic character of *Archaeophylus*, whereas  $P_{3-4}$  are rootless in P14687. It is possible that Ameghino may have been mistaken in this (Simpson, op. cit., p. 7), but the possibility can not be explored at present. The most that can be said now is that the mandible in question indicates either that *Archaeophylus* is valid or that there is an additional interatheriid in the Deseado fauna.

known that, although its validity is unquestionable, its relationships are somewhat doubtful. Identity with *Archaeophylus*, if the genus be valid, is possible, but more material of this form is necessary before an opinion can be reached.

In conclusion, I wish to express my sincere thanks to the American Association of Museums for the award of the Carnegie Grant that made the examination of the Tournouër collection possible, and to Professeur Camille Arambourg and Mlles. Raymonde Cintract and J. Signeux of the Laboratoire de Paléontologie for their unfailing courtesy and kindness during my stay at the Muséum National. The drawings have been made by Mr. John J. Janecek from stereoscopic photomicrographs taken by me.

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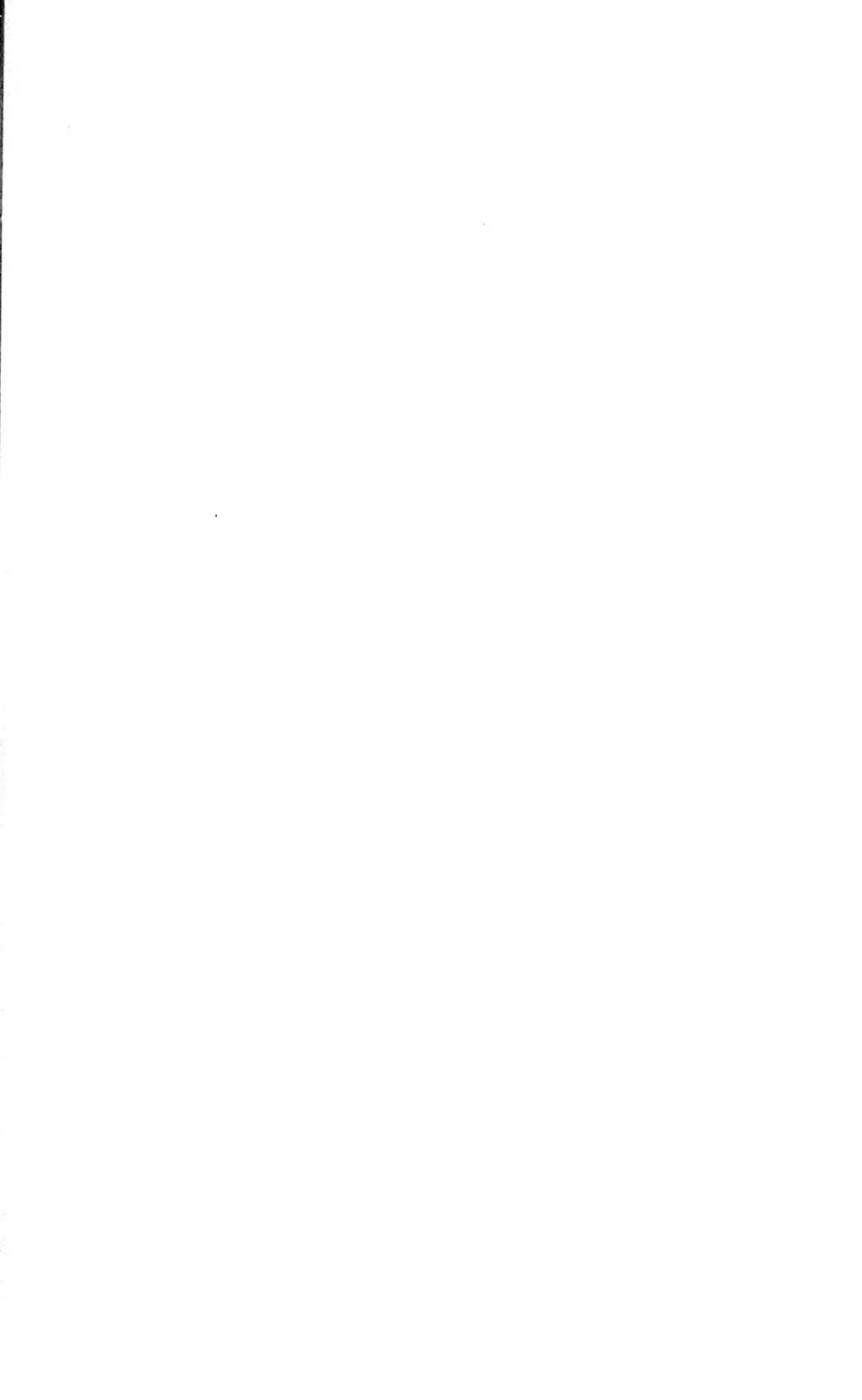
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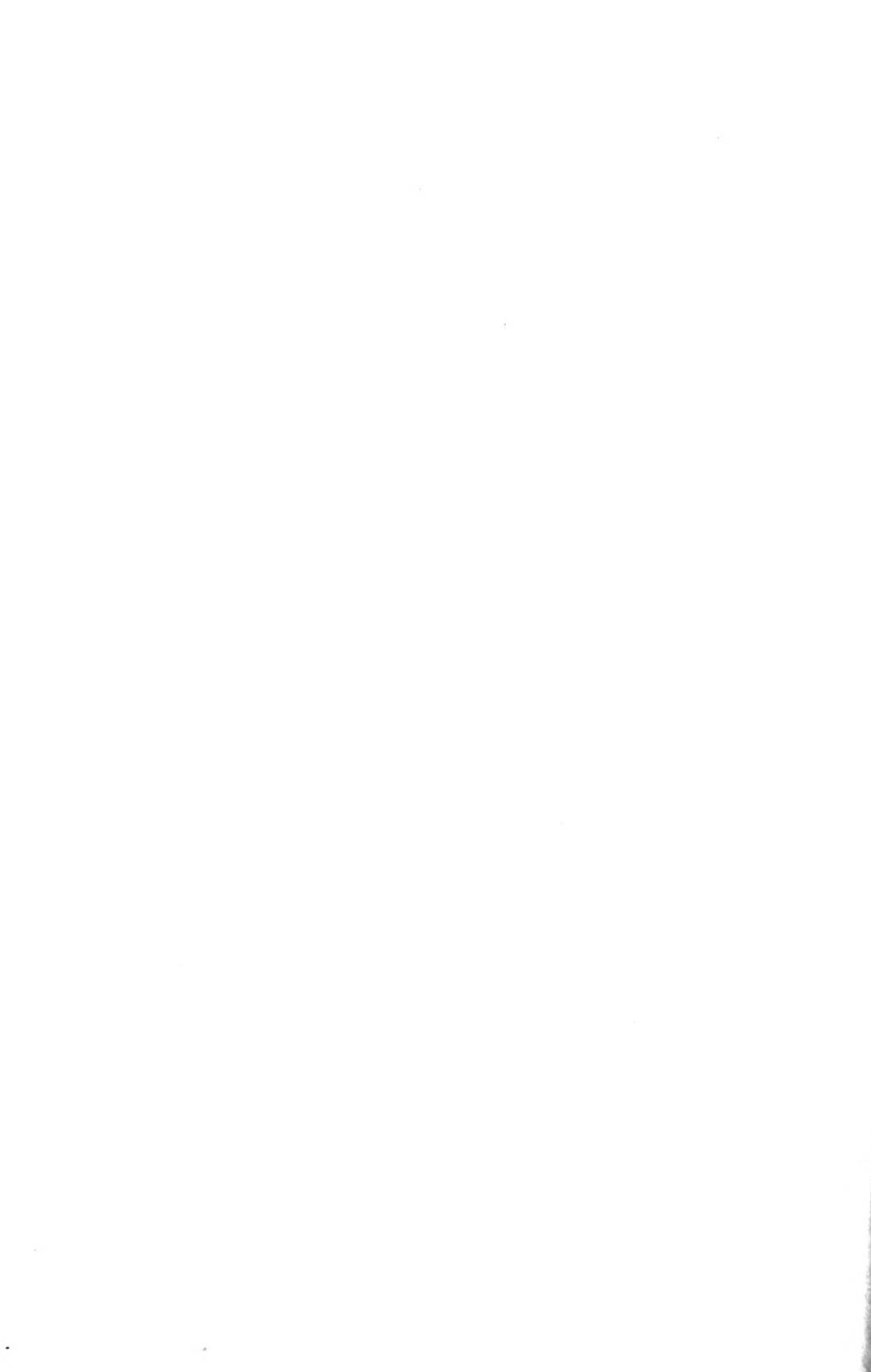














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